

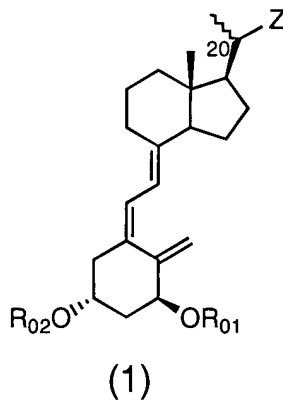
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

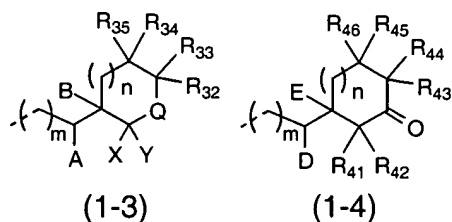
1-44. (Canceled)

45. (currently amended): A vitamin D₃ compound expressed by the following formula (1) or pharmaceutically permissible solvates thereof,



wherein, R₀₁ and R₀₂ are each independently a hydrogen atom, a trimethylsilyl group, a triethylsilyl group, a t-butyldimethylsilyl group, an acetyl group, a methoxymethyl group or a tetrahydro-4H-pyran-2-yl group;

Z is one out of the following formulae (1-3) and (1-4),



in the above formulae (1-3) and (1-4),

m is an integer of 0 to 2;

n is an integer of 0 to 2;

Q expresses >C(-F)-R₃₁ or >N-R₃₁, and herein R₃₁ is a hydrogen atom, a hydroxyl group, a trifluoromethyl group, a pentafluoroethyl group, a C₂-C₅ acyloxy group, a C₁-C₄ alkyloxy group or a C₁-C₄ alkyl group which may be substituted with a hydroxy group, a C₂-C₅ acyloxy group or a C₁-C₄ alkyloxy group;

R₃₂, R₃₃, R₃₄ and R₃₅ are identical to or different from each other, and they are a hydrogen atom, a hydroxyl group, a C₁-C₄ alkyl group or a C₂-C₅ acyloxy group;

A and B are identical to or different from each other, and they express a hydrogen atom or a hydroxyl group, or together express a single bond and form a double bond in cooperation with the single bond ~~already shown in the formula~~ formed between the carbon atoms to which each of A and B is attached, respectively;

X and Y together express a carbonyl group in cooperation with the carbon atom to which they are bonded, one of them is a hydrogen atom and the other is a hydroxyl group, or one of them is a hydrogen atom and the other is a C₂-C₅ acyloxy group;

R₄₁ and R₄₂ are identical to or different from each other, and they express a hydrogen atom, a trifluoromethyl group, a pentafluoroethyl group, a C₂-C₅ acyloxy group, a C₁-C₄ alkyloxy group or a C₁-C₄ alkyl group which may be substituted with a hydroxyl group, a C₂-C₅ acyloxy group or a C₁-C₄ alkyloxy group, or both the members together express a C₁-C₅ alkylidene group, or they express a C₃-C₆ cyclic alkyl group in cooperation with the carbon atom to which they are bonded;

R₄₃ and R₄₄ are identical to or different from each other, and they express a hydrogen atom, a trifluoromethyl group, a pentafluoroethyl group, a C₂-C₅ acyloxy group, a C₁-C₄ alkyloxy group or a C₁-C₄ alkyl group which may be substituted with a hydroxyl group, a C₂-C₅ acyloxy group or a C₁-C₄ alkyloxy group, or both the members together express a C₁-C₅ alkylidene group, or express a C₃-C₆ cyclic alkyl group in cooperation with the carbon atom to which they are bonded;

R₄₅ and R₄₆ are identical to or different from each other, and they express a hydrogen atom, a hydroxyl group, a trifluoromethyl group, a pentafluoroethyl group, a C₂-C₅ acyloxy group, a C₁-C₄ alkyloxy group or a C₁-C₄ alkyl group which may be substituted with a hydroxyl group, a C₂-C₅ acyloxy group or a C₁-C₄ alkyloxy group;

D and E express each a hydrogen atom, D is a hydroxy group and E expresses a hydrogen atom, D and E together express a single bond and express a double bond in cooperation with the single bond ~~already shown in the formula~~ formed between the carbon atoms to which each of D and E is attached, respectively, or E and R₄₁ together express a single bond and express a double bond in cooperation with the single bond ~~already shown in the formula~~ formed between the

carbon atoms to which each of E and R₄₁ is attached, respectively, wherein D expresses a hydrogen atom or a hydroxy group; and R₄₂ expresses a hydrogen atom, a hydroxyl group, a trifluoromethyl group, a pentafluoroethyl group, a C₂-C₅ acyloxy group, a C₁-C₄ alkyloxy group or a C₁-C₄ alkyl group which may be substituted with a hydroxyl group, a C₂-C₅ acyloxy group or a C₁-C₄ alkyloxy group,

with the proviso that the following compound (a) is excluded,

(a) a compound in which the groups of one combination out of R₃₂ and R₃₃, R₃₄ and R₃₅, and R₄₅ and R₄₆ are both hydroxy groups, both alkyloxy groups, or a hydroxy group and an alkyloxy group or where R₄₁ and R₄₂, R₄₃ and R₄₄ are both alkyloxy groups.

46. (currently amended): A vitamin D₃ compound or a pharmaceutically permissible solvate thereof described in Claim 45, wherein, in the ~~above~~-formula (1), Z is (1-3).

47. (currently amended): A vitamin D₃ compound or a pharmaceutically permissible solvate thereof described in Claim 45, wherein, in the ~~above~~-formula (1), Z is (1-4).

48. (currently amended): A vitamin D₃ compound or a pharmaceutically permissible solvate thereof described in one out of Claims 45, 46 ~~and-or~~ 47, wherein, in the ~~above~~-formula (1), R₀₁ and R₀₂ are both hydrogen atoms.

49. (currently amended): A vitamin D₃ compound or a pharmaceutically permissible solvate thereof described in one out of Claims 45, 46 ~~and-or~~ 47, wherein, in the ~~above~~-formula (1), m is 0 or 1.

50. (currently amended): A vitamin D₃ compound or a pharmaceutically permissible solvate thereof described in one out of Claims 45, 46 ~~and or~~ 47, wherein, in the ~~above~~-formula (1), n is 0 or 1.

51. (Previously Presented): A vitamin D₃ compound or a pharmaceutically permissible solvate thereof described in Claim 46, wherein, in the ~~above~~-formula (1), Q is > C(-F)-R₃₁.

52. (currently amended): A vitamin D₃ ~~derivative compound~~ or a pharmaceutically permissible solvate thereof described in Claim 46, wherein, in the ~~above~~-formula (1), Q is > N-R₃₁.

53. (currently amended): A vitamin D₃ compound or a pharmaceutically permissible solvate thereof described in Claim 46, wherein, in the ~~above~~-formula (1), R₃₁ is a hydrogen atom, a hydroxyl group or a C₁-C₄ alkyl group which may be substituted with a hydroxy group, a C₂-C₅ acyloxy group or a C₁-C₄ alkyloxy group.

54. (currently amended): A vitamin D₃ compound or a pharmaceutically permissible solvate thereof described in Claim 46, wherein, in the ~~above~~-formula (1), R₃₂, R₃₃, R₃₄ and R₃₅ are each a hydrogen atom.

55. (currently amended): A vitamin D₃ compound or a pharmaceutically permissible solvate thereof described in Claim 46, wherein, in the ~~above~~-formula (1), A and B are both hydrogen atoms, A is a hydroxyl group and B is a hydrogen atom, or A and B together express a single bond and form a double bond in cooperation with the single bond ~~already shown in the formula~~ formed between the carbon atoms to which each of A and B is attached, respectively.

56. (currently amended): A vitamin D₃ compound or a pharmaceutically permissible solvate thereof described in Claim 46, wherein, in the ~~above~~ formula (1), X and Y together express a carbonyl group in cooperation with the carbon atom to which they are bonded.

57. (currently amended): A vitamin D₃ compound or a pharmaceutically permissible solvate thereof described in Claim 47, wherein, in the ~~above~~ formula (1), R₄₁ and R₄₂ are both hydrogen atoms or together express a methylene group.

58. (currently amended): A vitamin D₃ compound or a pharmaceutically permissible solvate thereof described in Claim 47, wherein, in the ~~above~~ formula (1), R₄₃ and R₄₄ are both hydrogen atoms or together express a methylene group.

59. (currently amended): A vitamin D₃ compound or a pharmaceutically permissible solvate thereof described in Claim 47, wherein, in the ~~above~~ formula (1), R₄₅ and R₄₆ are both hydrogen atoms.

60. (currently amended): A vitamin D₃ compound or a pharmaceutically permissible solvate thereof described in Claim 47, wherein, in the above formula (1), D and E are both hydrogen atoms, D and E together express a single bond and form a double bond in cooperation with the single bond ~~already shown in the formula~~formed between the carbon atoms to which each of D and E is attached, respectively, or D is a hydrogen atom and E and R₄₁ together express a single bond and express a double bond in cooperation with the single bond ~~already shown in the formula~~formed between the carbon atoms to which each of E and R₄₁ is attached, respectively.

61. (currently amended): A pharmaceutical composition ~~composed of~~comprising a vitamin D₃ compound or pharmaceutically permissible solvate thereof described in claim 45 and a pharmaceutically permissible carrier.

Claims 62 -69 (Canceled).